

Notice of Allowability

Application No.

09/991,771

Examiner

Walter L. Lindsay, Jr.

Applicant(s)

VOLDMAN ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an Amendment filed on 7/19/2005.
2. ☒ The allowed claim(s) is/are 2-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

This Office Action is in response to an Amendment filed 7/19/2005.

Currently, claims 2-21 are pending.

Allowable Subject Matter

1. Claims 2-21 are allowed.
2. The following is an examiner's statement of reasons for allowance: the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:
 - ...forming a hybrid photoresist layer on the semiconductor substrate;
 - patterning the hybrid photoresist layer to form a first opening having a first edge;
 - and
 - forming said non-dopant region in the semiconductor substrate through the first opening, said non-dopant edge aligned in spaced relation away from the first edge, as required by claim 2;
 - ... wherein said non-dopant region is formed under a shallow trench isolation, as required by claim 8;
 - ... wherein said non-dopant region suppresses diffusion of dopant near the dopant edge, as required by claim 9;
 - ... wherein said non-dopant region comprises a Group IV element, as required by claim 10;
 - ...forming a dopant region having a dopant edge in the semiconductor substrate wherein said non-dopant region is within the dopant region and said non -dopant edge is aligned in spaced relation away from the dopant edge; and

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wherein the dopant region comprises an N type well, as required by claim 13;

...forming a dopant region having a dopant edge in the semiconductor substrate wherein said non-dopant region is within the dopant region and said non -dopant edge is aligned in spaced relation away from the dopant edge; and

wherein the dopant region comprises an P type well, as required by claim 15;

...forming a dopant region having a dopant edge in the semiconductor substrate wherein said non-dopant region is within the dopant region and said non -dopant edge is aligned in spaced relation away from the dopant edge; and

wherein said non-dopant edge is from about 500 Angstroms to about 1500 Angstroms away from the dopant edge, as required by claim 17; and

...forming a dopant region having a dopant edge in the semiconductor substrate wherein said non-dopant region is within the dopant region and said non -dopant edge is aligned in spaced relation away from the dopant edge; and

wherein the step of forming a dopant region comprises ion implanting at an angle substantially normal to the semiconductor substrate, as required by claim 18.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (571) 272-1674. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter L. Lindsay, Jr.
Examiner
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WLL

September 26, 2005

